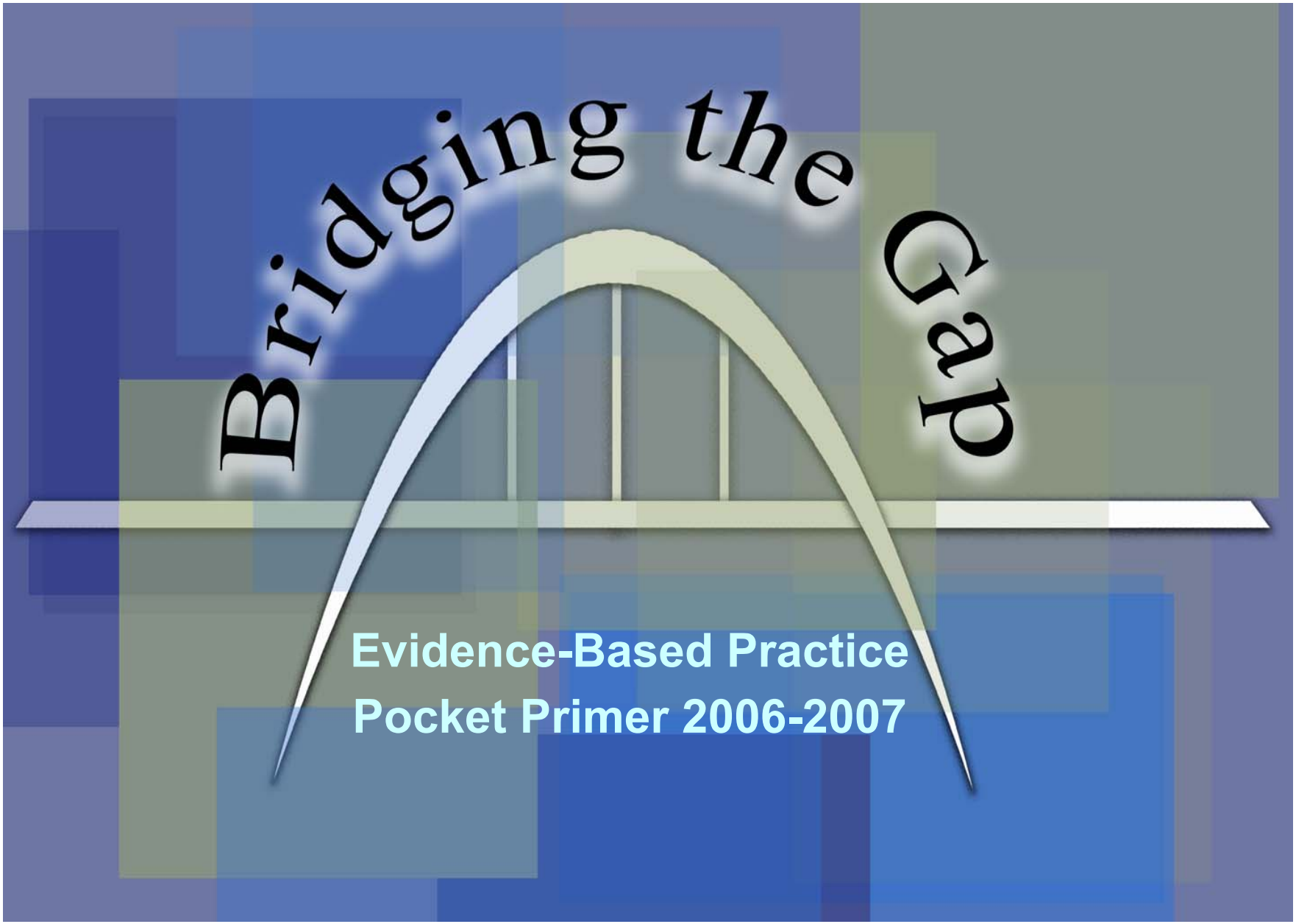

Bridging the Gap
Evidence-Based Practice
Pocket Primer 2006-2007

Building the Case for Evidence-Based Practice (EBP)

- Care Providers are faced with clinical uncertainty an estimated 40% of the time.
- It takes 17 years for research findings to be implemented into clinical practice.
- When faced with a clinical uncertainty the common source for answers is a 'curbside consultation'.
- Institute of Medicine states that, while we have incredible amounts of available research, we repeatedly fail to translate that knowledge and capacity into clinical practice.
- Without infusion of new knowledge, care modalities become out of date and may, in fact harm the patient.

EBP Barriers	EBP Facilitators
• Time	• Attitude of Inquiry re: clinical care
• Limited skills to finding the evidence	• Commitment to best practice
• Organizational constraints	• Information and training available
• Limited skills in interpreting the research	• Easy access to information at the point of care and when needed
• Mountain of ever-changing evidence	• Organization values performance improvements
• More comfort in doing what has always been done	• When using evidence, patient outcomes improve >30%

Reminder of what we are about…..

Our Chief, Dr. Clare Hastings, when describing who we are and what we do states

"we support biomedical research"

"we are an integral part of study implementation and coordination"

"we provide and manage clinical care/support to patients participating in research"

"we support new idea generation and study design"

"we support data collection, entry and analysis"

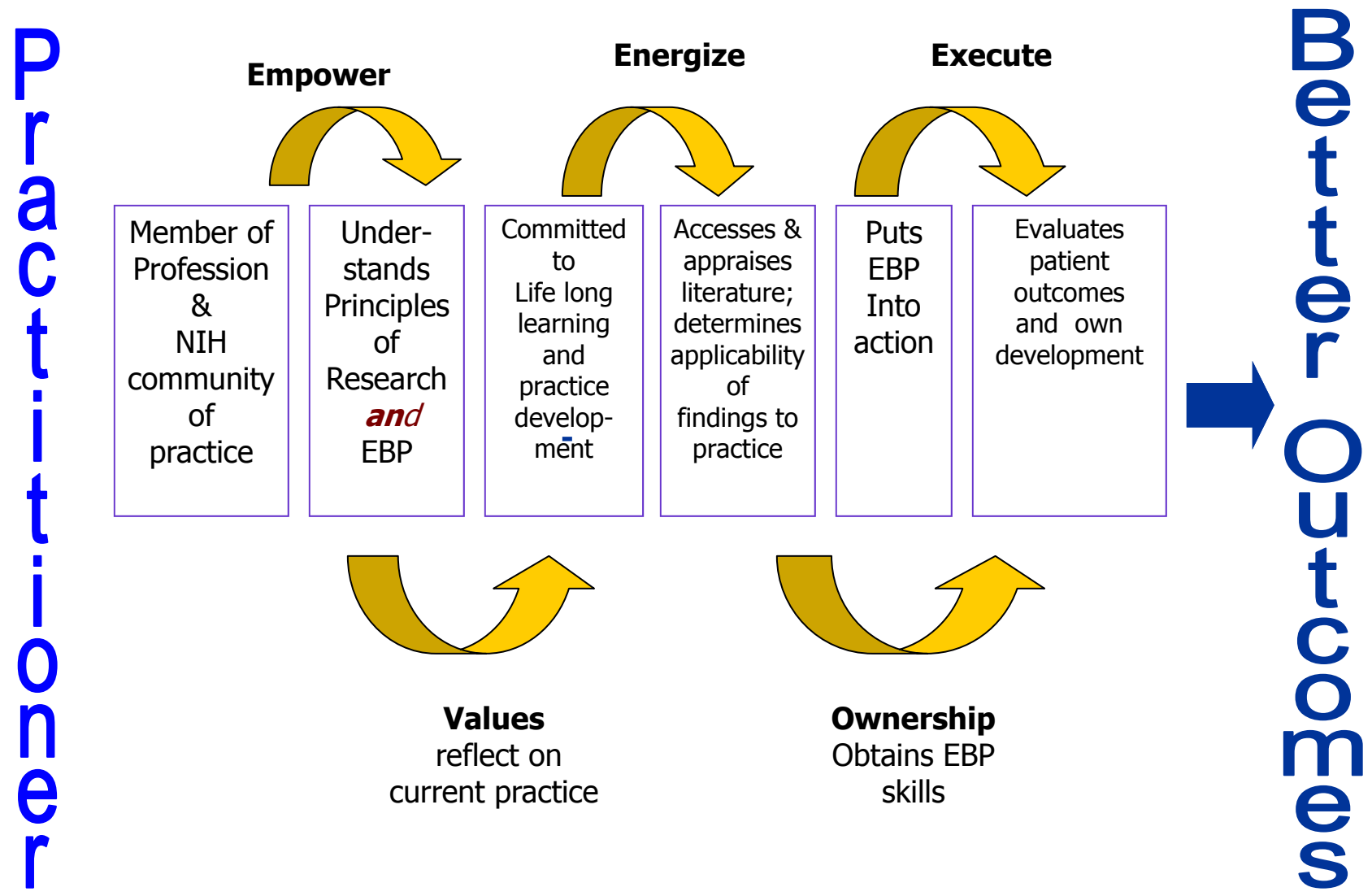
"we support dissemination of findings"

Reminder of what we are about…..

- We support the NIH Roadmap Initiative and Translational Research. Translational research is described as the process of applying ideas, insights and discoveries generated through basic scientific inquiry to the treatment or prevention of disease.
  http://nihroadmap.nih.gov

- We provide care that is outcome focused
  *Healthcare outcomes are those outcomes that result in changes in patients' symptom experience, functional status, safety, psychological distress and cost through the application of research discovery.

- As Nurses our professional mandate is to measure the end results of our care and to improve the results over time. See model next page (adapted from Glasgow Caledonian University, 2006)


Practitioner
Empower
Energize
Execute
Member of Profession & NIH community of practice
Under-stands Principles of Research and EBP
Committed to Life long learning and practice develop-ment
Accesses & appraises literature; determines applicability of findings to practice
Puts EBP Into action
Evaluates patient outcomes and own development
Values
reflect on current practice
Ownership
Obtains EBP skills
Better Outcomes

EBP Basics

Definition of Evidence:

Information/facts that are systematically obtained in a manner that is replicable, observable, credible, verifiable, and supportable.

Definition of EBP: Evidence-Based Practice is the conscientious use of current best evidence in making decisions about patient care. It is a problem solving approach to clinical practice that incorporates research, practitioner expertise and patient and family preferences.

Types of Research

Qualitative = collection of data in order to gain insight or understanding into a phenomena

Quantitative = collection of data in order to test an hypothesis or answer questions regarding the subjects of the study

Axiom = the best research is often a combination of qualitative and quantitative re-

What is Strength and Quality of Evidence?

How close a study or a group of studies comes to the truth is its strength or the robustness of the study design. How the study reduces the confounders and bias is its quality.

What are the Levels or Grades of Evidence?

Often depicted as a hierarchy. Level refers to the ranking of the evidence validity and grade refers to the clinical recommendations from study (ies) results.

Examples of clinical recommendations from AHRQ and PEP.

Grade or Clinical Recommendations-ABC system: from AHRQ

A = Recommendation based on consistent good quality patient-oriented evidence
B = Recommendation based on inconsistent or limited quality patient-oriented evidence
C = Recommendation based on consensus, usual practice, expert opinion, disease-oriented evidence and case series.

Oncology Nursing Society

Clinical Recommendations from a Professional Nursing Group

Recommend for Practice = Interventions for which effectiveness has been demonstrated by strength/quality of evidence. Harm is small compared to the benefits.

Likely to Be Effective = Interventions for which evidence is less well established than those above

Benefits Balanced with Harms = Interventions for which clinicians and patients should weigh the effects r/t to circumstances and priorities.

Effectiveness not established = Insufficient or inadequate data quality currently exist

Not recommended for practice = Clear evidence for harm or ineffectiveness. Cost may exceed any benefit.

Groups that Grade the Evidence For You

1. Cochrane Database— http://www.cochrane.org/reviews/index.htm
2. Mc Masters University— http://hsl.mcmaster.ca/resources/ebpractice.htm
3. DARE— http://www.york.ac.uk/inst/crd/darefaq.htm
4. Turning Research into Practice— http://www.Tripdatabase.com/
5. Center for Evidence-Based Medicine—http://www.cebm.net/

Grading and Clinical Recommendations from CHEST, 2006 129; 174-181

Grading and Clinical Recommendations from CHEST, 2006 129; 174-181

Recommendation	Risk/burden vs. Benefit	Type of Evidence	Implications
Strongly recommend	Benefits > risks	Systematic Reviews	Can apply to most patients
Recommended	Benefits> risks	RCT with limitations, case series, observation studies	Can apply to most patients, but may change with newer information.
Weak Recommendation	Benefits balance the risks/burdens	Limited evidence or inconsistent evidence	Action depends on circumstance and patient preference
Neither recommended nor condemned	Uncertainty of risks, benefits or burdens	Observational or case series	Other alternatives may be equally reasonable
Not recommended	Risks> Benefits	Any type of study	Side Effects of therapy may question any benefit

Study Types

Systematic Review = a structured literature review that addresses a question formulated to be answered by analyzing the evidence.

Meta analyses = uses statistical methods to combine the results from a number of studies that address the same question.

Cohort Study = An observational study in which a group of patients who receive an intervention is compared to a similar group who did not get the intervention.

Case Control = A study designed to investigate whether a particular exposure is associated with an outcome.

Randomize Control Trial [RCT] = Studies that randomly assign patients to either treatment or control group, in order to measure the effects [outcome] of the intervention. RCTs are often called the gold standard of research.

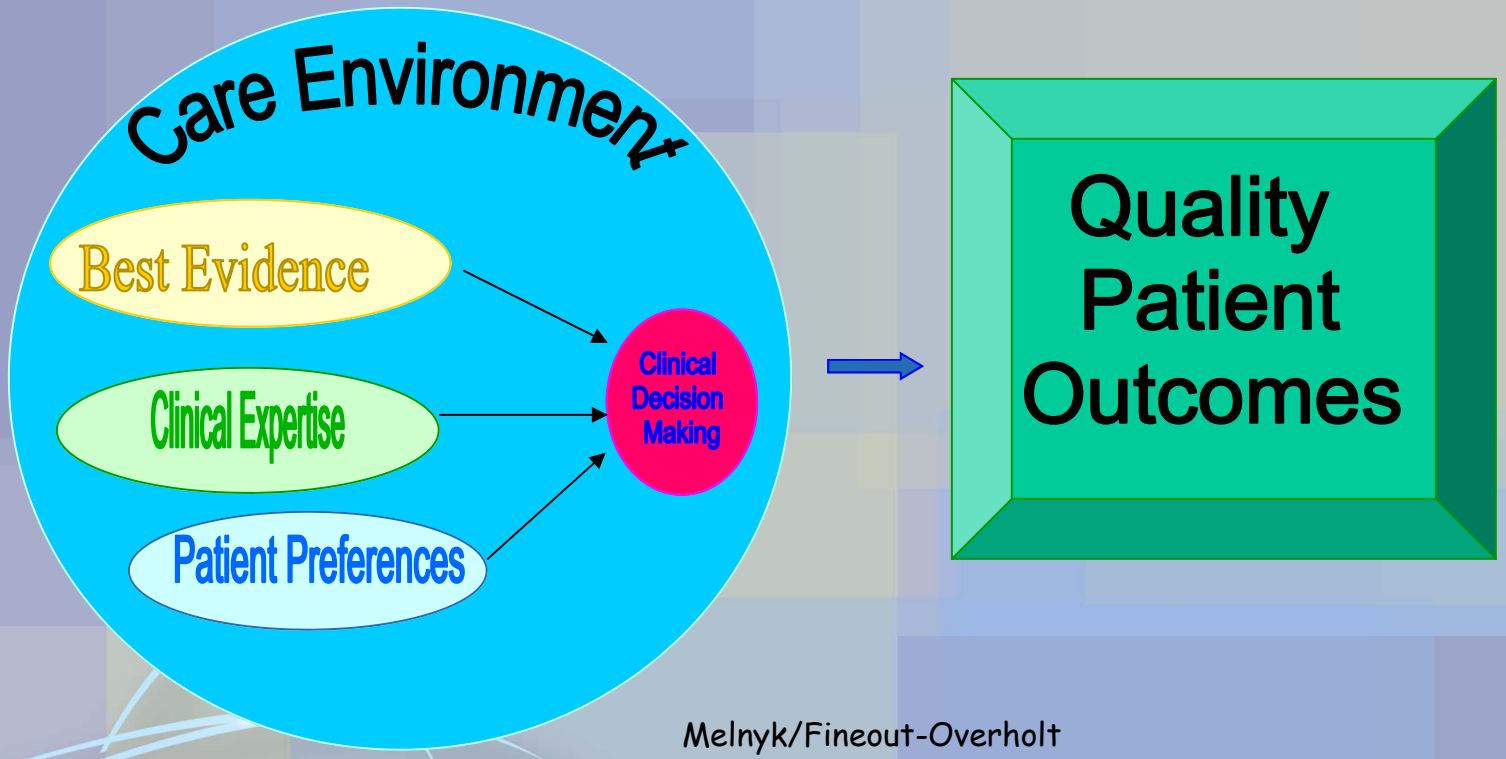
Sources of study type error = Pure chance. Error can come from confounders or other factors that could be influencing the outcome such as age. Confounders can be limited by stratification, matching, and reducing bias.

The body of evidence provides information for clinical decision making based on quality– quantity– consistency


Pyramid
Of
Evidence
Melnyk, & Fineout-Overholt
2003
Systematic Reviews
Randomized Control Trials
Controlled Studies
Case Control & Cohort Studies
Qualitative Systematic Reviews
Single Qualitative Study
Expert Opinion

EBP Axiom

Notice in the above pyramid patient preferences was not a category: remember best care/practice is the interplay of multiple factors; a merger of research evidence, the care environment, practitioner expertise, and patient/family preferences.



Melnyk/Fineout-Overholt
EBP Model 2003

EBP Process

1. Formulate an answerable question PICO
2. Search for the best evidence based on strength and quality
3. Critically appraise and analyze the evidence
4. Apply the evidence to a particular patient or group considering their values and preferences
5. Evaluate the outcomes

4 EBP Competencies

- Asking PICO questions
- Accessing the Evidence
- Appraising the Evidence
- Health Numeracy

From the UT ACE EBP Program

Skill # 1 Asking Answerable Questions

P = patients or populations
I = interventions or interests
C = comparison group or standard
O = outcome desired

Examples

Family presence during emergencies:
P = will family members of patients
I = who are present during resuscitation
C = compared to family not present
O = have an increase of benefits or harms?

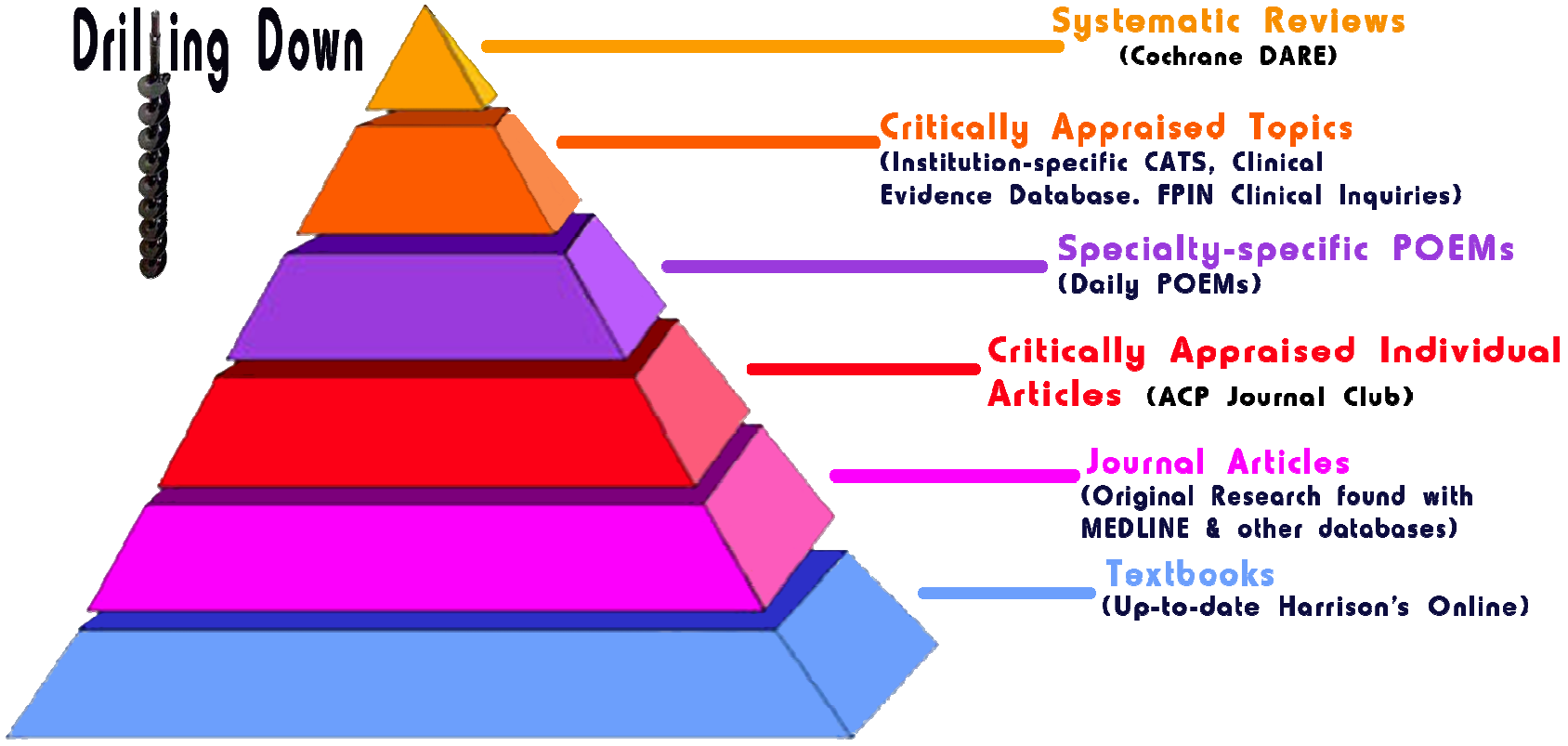
Continuation of meds perioperatively:
P = For patients undergoing general anesthesia
I = is continuation of 'statins' perioperatively
C= compared to no 'statins' perioperatively
O = associated with increased risk of rhabdomyolysis?

Showering post surgery
P = In patients who have moderate incisions
I = does showering less than 48h post op
C = compared to keeping the incision dry and covered for least 48-72 h
O = have an associated increase risk of infection or wound dehiscence?

Skill #2 Effectively /Efficiently Look for Meaningful Evidence

Type of Information	How to Find
Systematic Reviews	Cochrane Collaboration York Database of Abstracts of Reviews of Effectiveness (DARE) In PUBMED click on 'Clinical Queries then click on systematic review
Meta-analyses	Cochrane Collaboration In MEDLINE put in meta-analysis or meta-anal
EBP Practice Guidelines	National Guideline Clearinghouse Agency for Healthcare Research and Quality US Preventive Services Task Force Recommendations
Critically Appraised Topics (CATs)	Evidence-Based Medicine Reviews American Council of Physicians InfoPoems-Patient oriented evidence that matters Online Professional Journal Clubs Critically appraised topic banks University of Michigan

Scaling the mountain of literature takes time + skill-use the 'drilling down' method that UVa suggests. Start with systematic reviews ; consider using professional association databases such as Oncology Nursing Society-PEP, Cinahl Care Sheets. Remember to use the limit box on Pubmed, Cochrane, and Cinahl. The librarian is available to help with any searching question : welshju@mail.nih.gov. Don't forget her excellent tutorials: http://nihlibrary.ors.nih.gov/JW/informationist.html



List of 'Above Average' Tutorials on Information Mastery +EBP

University of Virginia
http://www.healthsystem.virginia.edu/internet/library/collections/ebm/index.cfm

University of Washington
http://healthlinks.washington.edu/hsl/classes/evidence

University of Rochester Medical Center
http://www.urmc.rochester.edu/hslt/miner/resources/evidence_based/index.cfm

Duke University and University of North Carolina
http://www.hsl.unc.edu/services/tutorials/ebm/welcome.htm
** this includes tutorials on how to use CINAHL and PUBMED

Wisdom Tutorial on EBP
http://www.widomnet.co.uk/sem6.html

University of Texas, Center for Evidence Based Practice
http://www.acestar.uthscsa.edu/Resources_www.htm

Skill #3 Critically Appraising Evidence

For the ***BEGINNER*** just 3 considerations are necessary…
Is the evidence valid—reliable--applicable?

Applicable = Is this a problem I see on my unit? Is the intervention realistic on my unit? Is the intervention being compared to the standard? Is the number of patients appropriate to the study design? Does the study offer a final recommendation? What are the risks and harms?

Valid = Does the study measure what it intends to measure? Did every participant have an equal chance at being chosen? Are there relationships between the cause and effect? Can the results be generalized to other persons, places and times?

Reliable = How precise are the measurements? Are the results reproducible? Does multiple testing yield consistent results? Are the results reproducible in any clinical environment and in any clinical population?

Skill #4 Health Numeracy

Health numeracy is defined as the degree to which individuals have the capacity to access, process, interpret, communicate and act on numerical quantitative graphical biostatistical and probabilistic information to make effective decisions.

For the Beginner

P values = The 'p' stands for probability. P value tells the investigator the probability that the observed results are due to chance alone. The values range from 0.0 to 1.0. The smaller the value the lower the probability the results occurred by chance. P = 0.001 means that there is a one in a thousand chance that the results are by chance. The p level of 0.05 is generally accepted as study significance.

Confidence Intervals= Is the mean value reported in % and often followed by a range of upper and lower limits of the results, i.e. CI= 95% 28-40. This means that if the study were repeated 100 times, then 95 times the results would be true (real) and the values would fall between 28 and 40. Putting it another way there is a 1 in 20 chance that the results will fall outside the range.

Power = the ability of a given statistical test to detect an effect.

Making EBP Obtainable in Everyday Practice

New Habit Formation

- Try questioning the norm + challenging the way "we've always done it"
- Try saying "show me the evidence"
- Try speaking 'data'
- Depend on high quality resources i.e. PUBMED, COCHRANE, and CINAHL
- See one —Do one—Teach one

Become the Tipping Point– summary from primer

1. Provide a promise or attention getter that outweighs the pain of change
2. Explain the features that demonstrate how good a particular action would be
3. Describe the value of the change in practice
4. Be prepared for objections
5. Get a commitment from the group for the next steps

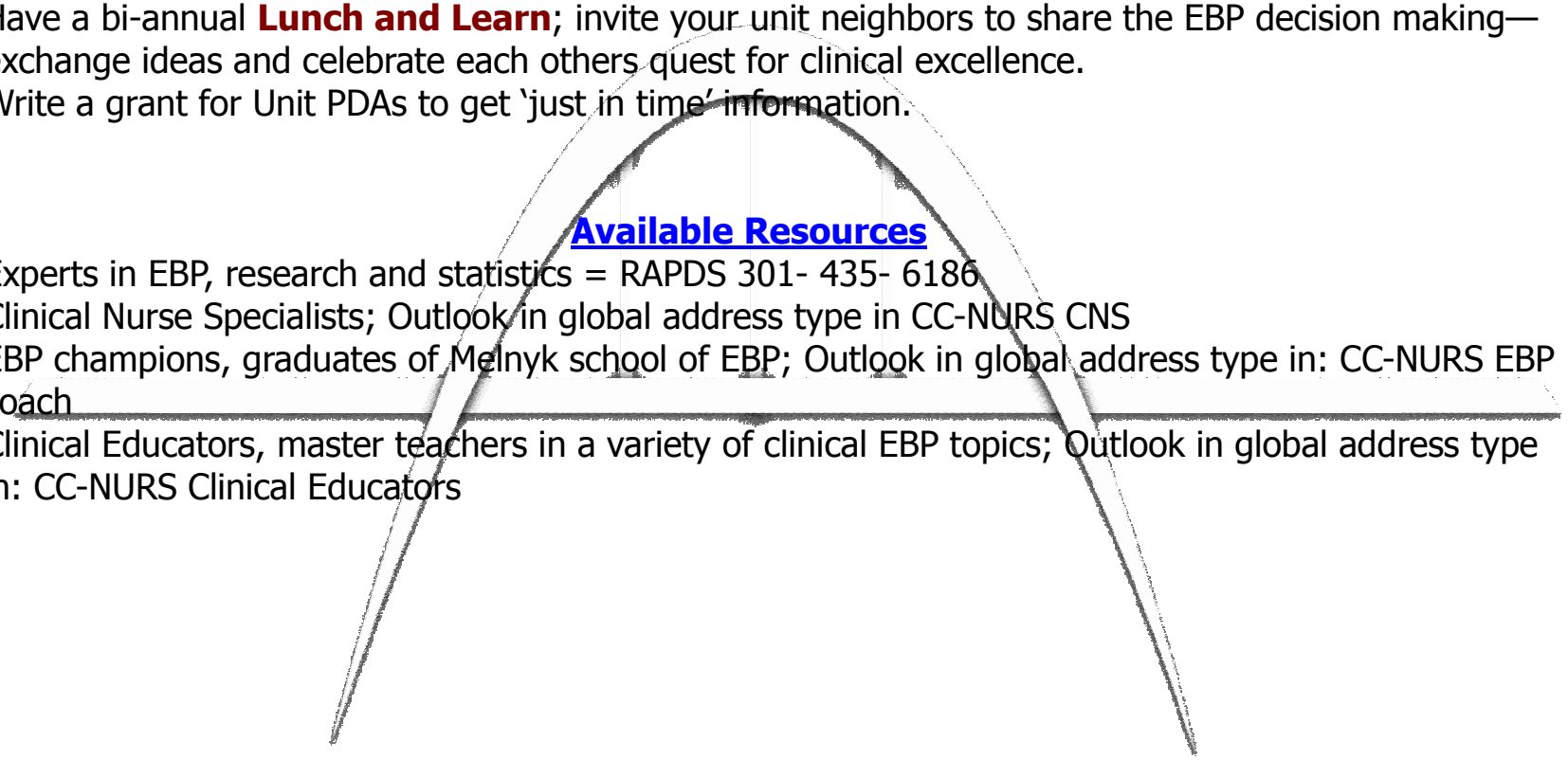
Strategies to Ignite the Spirit of Inquiry at the Bedside

1. Have EBP rounds on your unit
2. On the unit, have a burning clinical question box
3. Once a quarter review the burning questions—do a literature review on one or two of them
4. Develop EBP teams composed of several disciplines; and get a variety of perspectives on a topic
5. Have an EBP bulletin board like the one below

What we know from current research	What we know from expert opinion	What we know from involving the patient/family
Current literature	Informed colleague opinion	Patient preference
Known Outcomes	Consensus groups	Family preference
Practice Standards	Professional Guidelines	Ethnic, religious, cultural, ethical and psychosocial influences
Hospital Policy	Current Practice	
Legal Parameters		

Even More Ideas

- Every month do a mental review of the clinical incidences that stood out on your unit. Choose one to update yourself by performing a literature review.
- Compare your practice of a specific topic, e.g. cancer pain management to a national or professional guideline—determine if you need to adjust your practice.
- Have a bi-annual **Lunch and Learn**; invite your unit neighbors to share the EBP decision making—exchange ideas and celebrate each others quest for clinical excellence.
- Write a grant for Unit PDAs to get 'just in time' information.



Available Resources

- Experts in EBP, research and statistics = RAPDS 301- 435- 6186
- Clinical Nurse Specialists; Outlook in global address type in CC-NURS CNS
- EBP champions, graduates of Melnyk school of EBP; Outlook in global address type in: CC-NURS EBP coach
- Clinical Educators, master teachers in a variety of clinical EBP topics; Outlook in global address type in: CC-NURS Clinical Educators

This is a Product of Research and Practice Development Service

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